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PROVINCE OF BRITISH COLUMBIA.

DEPARTMENT OF AGRICULTURE (HORTICULTURAL BRANCH).

THE HOME VEGETABLE GARDEN FOR
COAST SECTIONS.

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THE FARMER'S VEGETABLE GARDEN.

THE farmer's vegetable garden should be made to furnish vegetables for the table throughout the year. On the farm so many things are favourable for a first-class garden that it is surprising that much greater interest is not taken in having one. Because of their mild climate, the Coast districts, and especially Vancouver Island, are particularly favoured.

The following list shows very well that a year-round supply of vegetables fresh from the garden may be had at moderate cost in good locations:—

Month.	Vegetables.
January	Kale, parsnips, leeks, lettuce, parsley.
February	
March	Spinach.
April	Radish, onions, rhubarb, broccoli.
May	Asparagus, peas.
June	Early cabbage, carrots, beets.
July	Early potatoes, parsnips, beans.
August	Tomatoes, cauliflower, onions, cucumbers, summer squash.
September	Cabbage, salsify, herbs.
October	Celery, brussels sprouts, leeks, winter squash.
November	Fall lettuce, early spinach.
December	Same as for January and February.

Besides the fresh vegetables which may be had through the winter months, the gardener can have a large variety stored, including potatoes, beets, carrots, onions, celery, squash, turnips.

LOCATION OF THE GARDEN.

The garden should be located as close to the house as possible. This facilitates caring for it and harvesting the product, which is usually done at spare times. A gentle slope towards the south or south-east is the most desirable for early vegetables. Good drainage is very essential. If the natural drainage is not sufficient, drains of either tile or cedar should be laid 3 feet deep and 40 feet apart.



PREPARATION OF THE SOIL.

Fall preparation is advisable, especially on clay soils. Subsoiling is also of great value, as it deepens the soil and thus increases the water-holding capacity. The ground should be left in the rough state through the winter, thus improving the physical condition. In the spring a thorough working with disk and harrow will be required. To fill up depressions and make a firm seed-bed, use a drag made of planks.

MANURES AND COMMERCIAL FERTILIZERS.

Stable manure is the best fertilizer for the garden. Partially rotted manure should be applied in the fall before ploughing. Well-rotted manure should be applied in the spring and worked into the soil with the disk and harrow.

While stable manure is valuable for the plant-food it contains, it also has a great value in improving the physical condition of the soil. On heavy soil the tendency is to lighten the soil and make it more suitable for plant-growth, by allowing air to enter and act on the stored-up plant-food. On sandy soil it has rather a binding action, holding the particles together and preventing loss of plant-food through leaching.

Commercial fertilizers can be used to great advantage. One composed of 100 lb. of nitrate of soda, 150 lb. of potash, and 50 lb. of acid-phosphate. One ounce to the square yard is approximately 300 lb. to the acre.

Potash and acid-phosphate should be applied during the winter months. Nitrate of soda should be applied to the growing crop, as it is easily leached out of the soil. The application of lime to the soil is very beneficial, and should be applied during the winter at the rate of 1,000 lb. per acre.

SEED.

Seed should be ordered some time before sowing. This often ensures a better quality. Many seeds lose their vitality after being kept a year, and old seed should not be relied upon. Test vitality of all seeds by placing in a damp cloth for a couple of weeks and noting number that germinate. English seed is used largely, and it has given excellent results.

PLANTS FOR THE GARDEN.

It is often necessary to start plants of certain crops before the danger of frost is over. This may be done by sowing the seed in shallow boxes, which may be put in a south window of a dwelling-house, or by sowing in a hotbed, or in a cold frame for later plants. Early cabbage, early cauliflower, tomatoes, celery, etc., are started in this way, and later transplanted two or three times before finally setting them in the open ground. The shallow box, about 4 inches deep, does very well to start the early plants in when only a few are required. Fill this box about three-quarters full of good soil made up of one part well-rotted manure, three parts good garden loam or rotted sods, and one part of fine sand. Have holes in the bottom of the box so that it will drain easily. The seed may be sown in rows and about $\frac{1}{4}$ inch deep, or sown broadcast and covered over with a light covering of sand.

In order to lengthen the season of fresh vegetables, and also to raise plants of varieties that require a long season, the hotbed is often employed. The heat for this is supplied by fermenting stable manure. When collecting

the manure, care should be taken to see that it is not "fire-fanged" or "burnt out." It should be well tramped, and when the necessary amount has been collected it should be turned over once and then made into a hotbed.

The hotbed should be located on the south side of buildings or a fence, and protected from cold winds as much as possible. The location should also be drained. A two-sash frame will be large enough for use on the average farm. The frame for supporting two sashes will need to be 6 by 6 feet, 18 inches high at the back and 12 inches in the front. Each sash will be 3 by 6 feet.

The manure may be put into a pit which is about 18 inches deep, or placed on the surface of the ground to the depth of about 2 feet. The bed of manure in either case should extend a foot beyond each side of the frame. As each layer of manure is placed on the bed it should be tramped firmly. After placing frame on bed, bank the manure around the side, and place then a few inches of soil on top of manure in the frame. Cover with sash, and when temperature has dropped to 80 degrees, seed may be sown in the soil in the hotbed, or in flat boxes similar to those recommended for use in the house.

In the management of hotbeds do not allow temperature to run too high. Open slightly in daytime, to permit fresh air to enter and rank gases to escape. Water during the middle of the day, and keep soil damp, but not wet.

Before transplanting plants grown in the hotbed to the open field they should be "hardened off." This should be started about two weeks before the plants are ready to be transplanted, and may be accomplished by increasing the time each day that the sash is kept off of the frame, until it is removed altogether.

CULTIVATION.

Cultivation should be constant. Besides the horse-cultivator commonly used, a wheel-hoe is advisable. This will do away with much of the hand-labour and will keep the soil in excellent condition.

STORING.

Some of our vegetables are allowed to remain in the soil all winter; these are parsnips, cabbage, broccoli, spinach, and parsley. When storing roots in a cellar, attention should be paid to:—

(1.) *Temperature*, which should not be higher than 43 or lower than 35 degrees.

(2.) *Ventilation*.—Important to admit fresh air when necessary, and allow damp air to escape.

(3.) *Careful Handling*.—Prevent bruising and breaking stems on squash and pumpkins.

(4.) *Drying out*.—When such crops as beets, carrots, and salsify are stored, drying out is prevented by keeping them covered with soil.

Celery which is stored in the cellar is taken up before it is touched with frost. The whole plant is removed to the cellar and placed in double rows, with a few inches between the rows. The roots are packed in sand or soil, which is kept moist by watering, the stalks being kept as dry as possible.

Pitting is usually practised for cabbage, celery, and potatoes. For cabbages a trench is dug, and three parallel rows of cabbage placed in the bottom. On top of these are placed two rows and then one row. This is covered lightly

with straw and then soil. Openings for ventilation are left at intervals of 5 feet. As it becomes colder the covering of soil is increased.

Celery and potatoes are stored in practically the same way; except that the potato-pit is usually larger than that used for celery or cabbage.

In pitting any vegetables attention should be paid to drainage and ventilation.

THE SUBURBAN VEGETABLE GARDEN.

The area of ground devoted to a suburban garden will not be as extensive as on the farm. More intensive methods will be pursued, and more exacting crops may be grown, as the garden is often as much for pastime as profit.

PLAN OF GARDEN.

Prepare plan for planting. Perennial plants and vegetables should be placed on one side. Follow these with plants that are to be left in ground through the winter. The remainder of the space will be devoted to the annual crop.

PREPARATION OF SOIL.

Cover ground with stable manure and plough in the fall. Several neighbours by clubbing together can hire at reasonable cost a man with horse and plough for a day. If area does not permit ploughing, have soil spaded deeply. In either case the soil should be left in the rough state through the winter. In the spring, cultivation will consist of harrowing and diskling or a thorough raking to prepare good seed-bed. For best results drainage is very essential. If the natural drainage is not sufficient, tile or cedar drains are used, and should be placed 3 feet deep and 40 feet apart.

PLANTING.

Planting may be commenced as soon as a strip wide enough for one or two rows has been prepared. Straight rows should be the rule. To ensure this, use a planting string or wire stretched in the desired direction, and the furrows for seed are made by drawing a hoe-handle along the line. The seed should be covered with a rake or hoe and the soil firmed over the seed.

Plants that are transplanted from the hotbed should be "hardened off" before being set in the ground. This may be done by gradually acclimatizing them to the effect of the sun and the wind, and will usually require about two weeks. Before removing from the hotbed they should be well watered. Plants should be set slightly deeper than they were before, and the soil pressed firmly around the roots. The best time for transplanting is just before a shower. If the day turns bright after transplanting, the plants should be shaded.

CULTIVATION.

As soon as the plants are set or are above ground cultivation should be commenced. A wheel-hoe is one of the most satisfactory tools that we can recommend for this work. With this the ground can be worked close to the plants. It does away with much of the hand-labour. Constant cultivation should be the practice in order to keep down the weeds and conserve the moisture.

HOTBED.

For growing plants for transplanting the seed may be started in boxes in the house. Hotbeds may also be used for this purpose as well as for growing certain early vegetables.

Descriptions of these two methods are given in first part of this circular.

GARDENING ON A CITY LOT.

The man who has only a city lot to depend on will have to adopt a much more intensive form of gardening than the farmer or suburban gardener. His space is limited and the soil usually the poorest. To offset this he has an abundant supply of water, and any soil can be improved by proper treatment.

A liberalance of manure should be applied, and the whole area spaded deeply and thoroughly in the fall. All rubbish should be removed. In the spring apply a commercial fertilizer composed of 10 lb. of nitrate of soda, 15 lb. of muriate of potash, 25 lb. of acid-phosphate, at the rate of 1 oz. per square yard. Broadcast the fertilizer and rake the ground thoroughly.

PLANTING AND CULTIVATION.

Commence planting as soon as ground has been prepared, attention being paid to the crop that is suitable for planting at that season of the year. For transplanting-work it will be advisable for the city man to secure his plants from the florist. Transplanting should be done on a cloudy day and attention paid to firming the soil around the roots.

As soon as the plants are set or when the seedlings appear above ground, cultivation should be commenced and kept up through the growing season. Because of the close planting the nature of the cultivation will be very intensive.

CULTURAL METHODS FOR DIFFERENT VEGETABLES.

ASPARAGUS.

The patch may be started by sowing seed or by buying one-year-old plants. Plant seeds about 3 inches apart, and transplant the following year to permanent rows 5 feet apart, and plants 2 feet apart in the rows.

Rich loamy ground is the most desirable, and a heavy application of manure well worked into the soil is essential to ensure proper growth. When preparation is completed, plough out furrows 5 feet apart and set plant in the bottom. The crown of the plant should be 6 inches below the surface. Cover plants with 3 inches of soil, and as the shoots grow fill in with soil until surface-level is reached. Keep cultivate through summer. Plough or hoe up to plants in the fall, and the old stalks should be cut off and burned.

Cutting is commenced the third year after planting, and should be kept up until the middle of June, but not later.

BEANS.

Beans require a fairly rich, warm, loose soil. They should not be sown until all danger from frost is over. The seed is usually sown in rows 2 to 2½ feet apart and 3 to 4 inches apart in the rows.

BROAD BEANS.

They require cool weather and a long season. Any soil will do, but a light loamy soil is preferable. The seed is usually sown in early spring in rows 30 inches apart and about 6 inches apart in the row.

BEETS.

For the early crop the seed may be sown as soon as the ground can be prepared in the spring. For the winter crop the seed may be sown about the 1st of June. The seed is sown in rows 30 inches apart, and thinned to 4 inches apart in the row. A rich soil and constant cultivation are necessary in order to produce quality. Liming the soil is also beneficial.

BROCCOLI.

Closely resembles cauliflower, although the heads are smaller and the plant is much hardier. The seed may be sown in the open about the end of May, and the plants transplanted about six weeks later. Plants are set 18 by 30 inches. It is a cool-weather crop and will not make its best growth until fall. Heads are blanched in the same way as cauliflower. Recommended as a winter crop for Vancouver Island.

BRUSSELS SPROUTS.

The culture is practically the same as for both early and late cabbage. Rows should be about 36 inches apart and 20 inches in the row. The small heads form on late plants towards the end of summer. The leaves are then removed to allow the sprouts to develop. Light frosts improve their quality.

CABBAGE.

For early cabbage a well-drained loamy soil is desirable, while late cabbage will do better on a cooler and heavier soil. Thorough working of the soil in the spring, as well as in the fall, is advisable.

Sow the seed for early cabbage from March 15th to the 1st of April. Transplant the seedlings about three weeks later into the cold frames, 2 inches apart. Plants are placed in the field some time between the middle of April and the 1st of May, in rows 30 inches apart and 18 inches in the row. Seed for late cabbage is sown about the end of April, either in a cold frame or in beds. Seed is sown in rows 4 inches apart and 30 in the row. Plants will be set in the field about the 1st of June in rows 32 to 36 inches apart and 20 to 22 inches apart in the row. Constant cultivation should be the rule, as cabbage requires lots of moisture.

CAULIFLOWER.

Any soil that will grow good cabbage will do for cauliflower. Continuous growth is important, as any check to growth will give a product poor in quality. The early and late varieties are started the same as early and late cabbage. When the heads are about the size of a teacup, the leaves should be tied together at the top or broken over so as to shade the flower. This ensures a good white flower.

CARROTS.

The soil should be deeply and thoroughly prepared, and of loose texture, in order to admit of even root-development. The seed is sown in the open ground in rows $2\frac{1}{2}$ feet apart, and the plants thinned to 2 inches apart. The root should be kept covered with soil, thus preventing it from becoming green and unfit for table use.

CELERY.

The chief requirement for celery is a well-drained soil, but still retentive of moisture and rich in plant-food. Barnyard manure is the best fertilizer, and heavy applications should be made.

The seed should be started in flats any time from the first to the middle of March. Six weeks after seedling transplant to shallow boxes, and 2 inches apart each way. Here they remain until planted out.

The plants are usually set in the field in single rows 5 feet apart and 5 inches apart in the rows, or in double rows. Here the rows are 5 feet apart and the plants 5 to 6 inches apart in the row. Level cultivation is practised.

In storing celery, dig with roots on. Stand upright in sand in a cellar or pit, and place two rows together, with a few inches between the rows.

SWEET CORN.

A warm location is essential. The soil should be well drained and well supplied with plant-food. Sow the seed as soon as danger from frost is over, and in hills $3\frac{1}{2}$ feet apart each way. Constant cultivation is necessary to keep down weeds, and conserve the moisture.

CUCUMBER.

The general recommendation made for corn will also apply to this crop. Hills are usually in rows 6 feet apart and 4 feet apart in the rows. Seeds are planted directly in the hills and four plants allowed to develop.

HERBS.

All the herbs are grown from seed sown in the open ground in early spring. Summer savory and sweet majoram should be cut when in full bloom, and sage should be cut before fall rains sand the foliage badly. To prevent sanding of the foliage the ground on each side of the plants may be mulched with straw.

LETTUCE.

The ground should be well manured and retentive of moisture. The seed may be sown in the open as soon as ground can be worked in the spring. For a fall crop seed may be sown the last of August. Seed is usually sown in rows 1 foot apart, and then plants thinned from 4 to 6 inches in the rows.

ONIONS.

Light loamy soil rich in plant-food is preferable. The ground cannot be made too rich, and a heavy application of barnyard manure ploughed under about 4 inches is advisable. The seed is sown in rows 12 to 14 inches apart and at the rate of about 4 lb. per acre. Seedling should be commenced as soon as possible in the spring, in order that the plants become established before the hot, dry weather.

The withering and falling of the tops indicates maturity and the onions should be pulled. After pulling leave about a week to dry. The onions may then be topped and placed in crates and stored.

ONION-SETS.

Sets may be bought as desired from the seedsmen. They may be set in the spring as soon as all danger from the frost is over. The same care and preparation of the soil as recommended for onions is advisable for growing onions from sets. The sets should be placed in rows 14 inches apart and 3 inches apart in the rows. When placed in the soil they should be barely covered.

PARSLEY.

The seed may be sown in the open ground in the early spring. This will supply the table all through the summer and the following winter. In some cases light winter protection will be required.

PARSNIP.

Parsnips require the same kind of soil and preparation as advised for carrots. The plants are thinned to 4 inches apart.

PEAS.

Peas may be sown in the spring as soon as the ground is fit to work. Fall manuring and ploughing to the depth of about 5 inches is recommended. Seed is sown in rows 30 inches apart and about an inch apart in the rows. Successional sowings may be made until up to the end of May. As the pea is a cool-season vegetable, early plantings are the most successful.

RADISH.

The seed should be sown in the spring as soon as the ground is fit to work. The rows are 1 foot apart and the plants thinned to 1 inch apart. Successional sowings should be made until the 1st of June.

RHUBARB.

A rich soil is very desirable for rhubarb. A heavy application of barnyard manure combined with deep and thorough tillage should be the rule before setting out the plants.

Plants may be obtained either from seed or from the division of the crowns. When dividing the crowns each piece should have at least one strong eye. Planting may be done in either the fall or spring, and the plant set so that the eyes are level with the ground.

The first year it is advisable to remove as little of the leaf-growth as possible, in order that the roots may become well established. Manure heavily in the late winter or early spring and work under. A patch that is well looked after should give satisfactory results for ten years.

SPINACH.

One of our earliest garden products. The seed may be sown in the spring as soon as the ground can be worked, and successional sowings made every three weeks up till the middle of May. The ground cannot be made too rich, and the richer it is the less liable the plant is to go to seed.

For a fall crop, seedling should be done about the last of August. For a crop that you intend to carry through the winter and use in the early spring, seedling should be done about the middle of September. In some districts this late crop will require a light covering of straw as a winter protection.

SQUASH.

The seed may be sown in hills in the spring as soon as danger from frost is over. The hills are in rows 10 feet apart and 8 feet apart in the rows. For vegetable marrow the hills are in rows 5 feet apart and 4 feet apart in the rows. Prepare the hills by placing 4 inches of manure in a space 4 feet in diameter, and digging this in to the depth of 6 inches.

Vegetable marrow may be used as soon as they are of sufficient size. Late varieties may be harvested as soon as the vines begin to die in the fall. When harvesting, leave part of stem attached to the squash, as this will lessen danger from rot.

Squash should be stored in a thoroughly dry and fairly warm room.

TOMATO.

For the home garden plants may be either raised by the gardener himself or obtained from a greenhouse-man. They will require a rich piece of soil, warm, and well drained.

When set in the field they are usually staked and should be planted in rows 3 feet apart and 2 feet apart in the row. The plant is trained to a single stem, all laterals being removed, and when the plant is 5 feet high it is pinched back. Stakes are usually made of saplings or of lumber 1½ inches square. Mill refuse is often used for stakes.

TURNIPS.

For the early crop the seed may be sown as soon as the ground can be worked in the spring. For the main crop for winter use the seed is sown about the middle of June. A continuous growth is essential in producing quality; a growth checked by heat or lack of moisture develops a root containing much fibre and lacking in quality.

NEW SOIL.

This is a phase of vegetable-growing that the man in the newly made clearing has to contend with. Often his seed will not germinate, or if it does it will reach the height of a few inches and then stop.

The following things should be considered:—

(1.) Is the drainage sufficient to ensure plant-growth? No plants will grow when there is an excess of water. To overcome this, put in drains 3 feet deep and 40 feet apart.

(2.) Is the soil acid? Find out by testing your soil. Procure from the drug-store a piece of blue litmus-paper. Take a sample of soil, moisten it, make an opening in the soil and insert paper, and leave a few minutes. If the paper turns red your soil is acid. To improve this, give an application of lime at the rate of at least 1,000 lb. per acre.

(3.) Get humus into the soil by applying barnyard manure or by turning under a crop of clover or rye.

(4.) Cut off the trees for some distance from planted land to admit sunlight and air.

LIST OF VEGETABLES FOR BEGINNERS.

For the benefit of beginners the following list is attached:—

	Farmer's Garden.	Suburban Garden.	City Garden.	Date of Sowing.	Varieties.
Asparagus	1.0 roots 1 pt.	50 roots ½ pt.	25 roots ½ pt.	Early spring	Argentuil, Cnover's Colossal.
Beans	1 pt.	1 pt.	1 pt.	After danger of frost is over	Windsor Broad Bean, Refugee Wax, Prolific Golden Wax.
Beets	2 oz.	1 oz.	1 oz.	Early spring	Early Egyptian Turnip, Eclipse.
Broccoli	1 pkt.	1 pkt.	1 doz. plants	May 30th	Walcheren.
Brussels sprouts	1 pkt.	1 pkt.	1 doz. plants	May 30th	Improved Dwarf.
Cabbage	1 pkt.	1 pkt.	2 doz. plants	March 15th to April 15th	Early Danish Wakefield, Winningsstadt, Late Danish Ballhead.
Carrots	1 oz.	1 pkt.	1 pkt.	April 1st	Chantrelay, Danvers.
Cauliflower	1 pkt.	1 pkt.	1 doz. plants	April 15th	Erfurt, Snowball.
Celery	1 oz.	1 pkt.	4 doz. plants	March 15th	Golden Self blanching, White Plume, Winter Queen.
Sweet corn	1 pt.	½ pt.	4 oz.	After last frost	Golden Bantam, Ringleader.
Cucumbers	1 oz.	1 pkt.	1 pkt.	After last frost	Davis' Perfect, Perfection.
Herbs	1 pkt.	1 pkt.	1 pkt.	April 15th	Thyme, Sage, Sweet Marjoram.
Onions	2 oz.	1 pkt.	1 pkt.	Early spring	Danvers (Australian Brown).
Onion-sets	1 qt.	1 pkt.	1 pkt.	Early spring	White, Dutch, Shallots.
Parsley	1 oz.	1 pkt.	1 pkt.	Early spring	Champion Moss Curled.
Parsnip	1 oz.	1 pkt.	1 pt.	April 1st	Hollow Crown.
Peas	1 qt.	1 pt.	1 pt.	Early spring	Sentinel, Telephone.
Potatoes	2 b.	1 bus.	2 pks.	April 15th	Eureka, extra early, Beauty of Hebron, Up-to-date, Caroten No. 2.
Radish	3 oz.	1 oz.	1 pkt.	Early spring	French Breakfast, Icicle, Rosy Gem.
Rhubarb	50 roots	25 roots	1 doz. roots	Early spring	Victoria, Limneas.
Spinach	1 oz.	1 oz.	1 pkt.	Early spring	Victoria.
Squash	1 oz.	1 pkt.	1 pkt.	After last frost	Delicata, Vegetable Marrow, Hubbard, Green.
Tomato	1 pkt.	1 pkt.	1 doz. plants	After last frost	Earliana.
Turnip	1 oz.	1 pkt.	1 doz. plants	May 30th	Milan, Snowball.

POINTS TO BE EMPHASIZED.

Drainage.—Especially on the Lower Mainland is this important. If the natural drainage is not sufficient, use either tile or cedar drains, placed 3 feet deep and 40 feet apart.

Fall Ploughing.—This is very important. The fall and winter rains are stored up, and but a small amount is lost in the spring if no spring ploughing is practised.

Manuring.—Stable manure the best for the garden. Partially rotted applied in the fall before ploughing, well rotted applied in the spring before disking. Commercial fertilizers important in supplementing farmyard manure. Application of lime is important, at the rate of 1,000 lb. or more per acre.

Storing.—Temperature 35 to 43 degrees for practically all vegetables except squash, which should be stored at about 50° Fahr.

Ventilation.—Admit fresh air.

Careful Handling is necessary to prevent bruising of all delicate-skinned vegetables.

Drying out.—Cover vegetables, as beets, carrots, salsify, with soil to prevent drying out.

Insects.—Cabbage-maggot attacks stem at the base. Control by applying a cupful of the following solution around stalk: 1 pint crude carbolic acid; 1 lb. of soap; 1 gallon water. Dissolve soap in water and add carbolic acid. Make this stock solution up to 25 gallons with water.

For further information on vegetable insects, see *Spray Calendar for 1913*.

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